

The Perfect Fit

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Roanoke County Schools, Roanoke, VA

Grade Level: 7-10

Time Allotment: 2 class periods

Overview: Our nation is facing a national crisis in regards to health and fitness. Childhood obesity and diseases associated with it are at an all time high. Understanding the components of physical fitness, evaluating cases studies, and making recommendations will arm students with the necessary skills to make healthy choices.

Subject Matter: Health

Learning Objectives:

Students will be able to:

- Identify the necessary components of fitness
- Analyze case studies and create fitness recommendations
- Create a media-based project to educate peers/community about the importance of fitness

Standards: Virginia Standards of Learning which can be found at:

<http://www.pen.k12.va.us>

Health 7.2:

- The student will describe and exhibit the behaviors associated with a physically active and healthy lifestyle.

Health 9.1:

- The student will apply health knowledge and skills to the development and analysis of personal goals to achieve and maintain long-term health and well-being.

Health 9.2:

- The student will analyze and evaluate the relationship among healthy behaviors, disease prevention and control, and comprehensive wellness.

Health 10.1:

- The student will demonstrate an understanding of health concepts, behaviors, and skills that reduce health risks and enhance the health and well-being of self and others throughout life.

Media Components:

Video:

Food, Nutrition and Exercise, # 3 “Ten Reasons to Get and Stay in Shape-Getting Fit in the Teenage Years” available from BRPTV

Jeopardy PowerPoint

The Perfect Fit WebQuest WebQuest: A Perfect Fit
<http://www.rcs.k12.va.us/tech/perfectfit/pfintro.htm>

Materials:

For Entire Class:

- 1 computer with PowerPoint software and an LCD display unit
- 1 VCR with display unit

For cooperative groups of 3-5 students:

- Case studies
- 1 computer with Internet Access
- Activity packet for WebQuest

Prep for teachers:

- Prior to teaching this lesson, bookmark the web site used in the lesson on each computer in the classroom.
- Download the Jeopardy PowerPoint to a computer with the LCD display unit.

When using media, provide students with a **FOCUS FOR MEDIA INTERACTION**, a specific task to complete and/or information to identify during or after viewing of video segments, websites, or other multimedia events.

Introductory Activity:

Step 1

Say: “Today we are going to check your knowledge about fitness. You’ll be divided up into 3 teams and will compete in Jeopardy Fitness.”

Divide students into 3 groups. The groups will compete, Jeopardy style, in a 30-question computer generated game. Groups will be represented by the players Phillip, Daphne, and Kathy.

Step 2

Display the Jeopardy PowerPoint from a computer and projector. Follow these directions while playing the game with your class:

- As you play the game, click on the Text Dollar Amount that the contestant calls, not the surrounding box.

- When the group of students have responded with a question, click again anywhere on the screen to see the correct question. Keep track of which questions have already been picked by printing out the game board screen and checking off as you go.
- Click on the “Game” box to return to the main scoreboard.
- Enter the score into the black box on each player’s podium.
- Continue until all clues are given.
- Note: When you are finished playing, do not save the game. This will overwrite the program with the scores and data you enter.

Step 3

Once the first round has been completed, pause the game. **Say:** “We’ll return to the second round at the end of this lesson.”

Learning Activity:

Students will review the information on the components of fitness which should have already been covered in a previous lesson and by the Jeopardy game. **Ask** your students, “In order for a person to be healthy, how many components of fitness must be considered?” (Five) **Ask,** “What are the components of fitness?” (Cardiovascular endurance, muscular strength, muscular endurance, flexibility, body composition) **Tell** your students, “Today we will review some of the components necessary for a healthy lifestyle.”

1. Introduce the video, *Food, Nutrition, and Exercise #3*, “Ten Reasons to Get and Stay in Shape”. **Provide a Focus for Media Interaction** by saying: “Watch this video clip for problems caused by our current lifestyles and what age group this is affecting.” **Start the video from the beginning and play** for approximately 1 minute and 10 seconds. **Pause** the video when you see an image of a *Newsweek* cover showing an overweight teen and an ice cream cone.

Say, “Describe some popular lifestyles that are taking their toll on Americans.” (Super Sized fast foods, long hours behind the wheel of cars and at computers and TV)

Ask, “What diseases can we associate with our current lifestyles and lack of fitness?” (Diabetes, obesity, high blood pressure, heart attack, cancer)

Ask, “What age groups are affected by these problems?” (All age groups – older Americans and teens alike)

2. **Fast forward** until you see a screen that says “Top Ten Reasons To Get and Stay in Shape.” **Focus for Media Interaction- Say,** “As we watch this next segment, look for how fitness for teenagers is like a bank account and how quickly someone might see benefits.” **Resume** the video and play until you see the note pad displaying the number one reason for getting in shape – improves mood.

Ask, “Why does Dr. Harns see fitness for teens as a bank account?” (The more you do now, the healthier you will be later in life)

Ask, “How soon will you see benefits?” (As soon as you start adapting good fitness habits)

Ask, “Why does being in shape feel good?” (Improves mood)

Say, “So adding exercise to your lifestyle makes you feel good and improves your mood.”

3. **Focus on Media interaction-Say,** “Let’s find out how exercise can improve mood. Pay particular attention to the chemical that is produced by the body when you exercise and what positive effect it has on a person. ” **Resume** the video and play for approximately 1 minute and 4 seconds until you see a notebook page listing the following: “Physical activity brightens a person’s mood. Decreases stress, depression, and anxiety.” **Pause the video.**

Ask, “What chemical is produced in the body when someone exercises regularly?” (Endorphins)
Ask, “How are we positively affected by endorphins?” (Endorphins that are released when you exercise reduce anxiety, improve perceptions and moods, increase attention span and alertness, enhance relaxation, reduce test anxiety, foster self confidence, decrease depression and stress.)

4. Focus on Media interaction-Say,” Feeling good is certainly one reason for people to stay healthy. Exercise can also improve cardiovascular health. As we watch this next section, focus on how good cardiovascular health can keep you in shape.” **Resume the video and play** it for approximately 1 minute until you see a notebook page displaying: “average heart rate = 70 BPM, fit heart rate= 40 BPM... 15,768,000 less contractions per year.”

Ask, “What is the cardiovascular system comprised of?” (Heart and blood vessels)

Ask, “What does the CV system do?” (Delivers oxygen to the muscles, eliminates metabolic waste through exhalation)

Ask, “Why is a lower heart rate advantageous?” (Fewer BPM = less work for the body)

5. Focus on Media Interaction- Fast Forward past the section on blood pressure and cholesterol until you see feet running on a treadmill. **Say**, “Let’s find out how a healthy CV system can keep us healthy.” **Resume** the video and play it for approximately 40 seconds, until you see a notebook page displaying: “Exercise and proper nutrition can increase muscular strength, improve blood circulation and reduce blood pressure.”

Ask, “Being active improves our CV system. How can an active lifestyle affect heart disease?” (Cut risk by 50%)

Ask, “What is the best way to improve CV health?” (Aerobic exercise 3 x weekly)

Say, “Cardiovascular health is a component of fitness. Can you be fit if you don’t have a healthy cardiovascular system?” (No)

Ask, “Is CV health all that you need in order to be healthy?” (No)

6. Focus on Media Interaction – Say, “In this next section, we’ll explore two other components of fitness – Muscular Strength and Endurance. Look for the types of muscles in our bodies.” **Resume** the video and play for approximately 1 minute, until you see a notebook page that displays: “Fast-twitch fibers and slow-twitch fibers.”

Ask,” What are the 3 types of muscles?” (Skeletal, smooth, and cardiac)

Ask, “Which type of muscles can we move and control?” (Skeletal)

Ask, “What types of muscle fiber make up skeletal muscle?” (Fast twitch and slow twitch)

7. Focus on Media Interaction -Say, “Let’s find out how our bodies use different types of skeletal muscle.” **Resume** the video and play for approximately 35 seconds until you see kids playing volleyball on the beach.

Ask, “What exercises are fast twitch muscles suited for?” (Powerful, fast and explosive activities)

Ask, “What is an example of a strength activity?” (Weight training, basketball)

Ask, “What exercises are slow twitch muscles suited for?” (Endurance activities)

Ask, “What is an example of an endurance activity?” (Running, biking, cross country skiing)

Ask, “Do most people have more of one type than another?” (No, most have both)

8. Focus on Media Interaction - Say, “Muscular strength and endurance are both components of fitness. Let’s find out why these components are important to health”. **Resume** the video and play for approximately 50 seconds until you see a notebook page displaying: “Exercise Builds

and preserves muscle mass which, in turn, increases calorie-burning efficiency to reduce body fat.”

Ask,” What are some reasons we want to maintain muscular strength and endurance?” (Strength and endurance enable you to do what you want to do, burn more calories)

Ask,” How do muscles burn more calories?” (Lean body mass is metabolically active where fat mass is not)

Ask,” If you have a higher muscle to fat ratio, do you only burn more calories when working out?” (No you burn more calories all day long and even when you are asleep)

Ask, “What component of fitness is an individual’s muscle to fat ratio?” (Body Composition)

Say, “There are other reasons to get and stay in shape that are covered on this video, but we’ll cover those another time.”

Culminating Activity:

Fitness Jeopardy Round Two

Step 1:

Divide students into their original groups and display Round Two of the Jeopardy PowerPoint.

Say, “ The information we’ve just reviewed will help us finish the Jeopardy game.”

Step 2: Play the game until it is completed.

Assessment:

Say,” We’re going to complete an activity that will allow you and your group to become a fitness training team. Each group of three will be assigned a client (see attached case studies) who is in need of fitness recommendations. You will work together to make the best possible recommendations to help your client become fit and healthy.”

- Divide students into groups of three. Direct each group to visit the following website to begin The Perfect Fit WebQuest. <http://www.rcs.k12.va.us/tech/perfectfit/pfintro.htm>
- Complete The Perfect Fit WebQuest.
- Assign time for students to present the results of their fitness assessment to the “clients” (their classmates).

Assessment:

The WebQuest will allow students to choose a method of educating their peers as to the importance of a regular fitness program. They may choose between making a PowerPoint presentation, a website, or a brochure.

Cross-Curricular Extensions:

Mathematics:

- Calculate BMI
- Calculate Target Heart Rate
- Calculate Resting Heart Rate
- Calculate VO2 Max

Technology:

Collaborate electronically with classrooms and participate in projects such as:

- <http://exchange.co-nect.net/fitness>
- Fitness self-assessment
 - <http://www.justmove.org/home.cfm>
- Ask a Sports Expert
 - <http://www.sports-media.org/>
- Self Assessment activities using the following websites:
- Target Heart Rate Calculator
 - <http://www.stevenscreek.com/goodies/hr.shtml>
- BMI
 - <http://www.cyberdiet.com/reg/index.html>
<http://www.halls.md/body-mass-index/bmi.htm>

WebQuests created by other school systems

<http://www.manteno.k12.il.us/lweedon/webquest.htm>

<http://www.yorkville.k12.il.us/webquests/webqascalani/webqascolani.html>

Science:

This lesson can be used to reinforce the concepts covered in the following Science SOL's:

- BIO.5 d, e

Explain the purpose and functioning of the following human systems:

- **Circulatory**
- **Skeletal**
- **Integument**

- BIO.2 c

Discuss the major factors that impact human health, including

- genetic predispositions;
- microorganisms;
- environmental influences.

Community Connections:

- Invite a panel of guest speakers to discuss fitness related issues with the class. The panel might consist of personal trainers, coaches, doctors, and nutritionists.

Assistive Technology:

- **Supportive grouping:** When creating groups for the Jeopardy game and The Perfect Fit WebQuest, special needs students should be grouped with students who demonstrate strengths that balance the area of need.

- Comment fields can be added to the case studies used in The Perfect Fit to support students in their area of weakness. Comments might include additional directions, simplified directions, calculations or formulas needed to complete the activity.
- Students with reading or writing disabilities could be given the task of PowerPoint Manager. The PowerPoint manager's primary responsibility would be to collect information generated by group members and insert those files into the presentation. Identifying and selecting meaningful graphics could also be assigned to this individual.